CLAIMS

1- 27. (Cancelled)

28. (Original) A method, of delivering an agent to a cell expressing a glycoprotein receptor to a subject in need thereof, said method comprising administering to said subject an agent coupled to a modified glycoprotein hormone having at least one mutation that increases the hormone activity relative to the wild type glycoprotein hormone.

29. (Original) The method of Claim 28 wherein the modified glycoprotein hormone is a modified TSH.

30. (Original) The method of Claim 28 wherein the modified glycoprotein hormone is a modified FSH.

31. (Original) The method of Claim 28 wherein the modified glycoprotein hormone is a modified LH.

32. (Original) The method of Claim 28 wherein the modified glycoprotein hormone is modified CG.

33. (Original) The method of Claim 29, wherein the modified TSH differs from the wild type TSH in that the modified TSH α-subunit comprises at least one basic amino acid at positions selected from the group consisting of 11, 13, 14, 16, 17, 20 and 22.

34. (Original) The method of Claim 29 wherein the modified TSH comprises at least one basic amino acid at position 1, 6, 17, 58, 63, 66, 69 and 81 of the β-subunit.

35. (Original) The method of Claim 29 wherein the modified TSH comprises at least three basic amino acids at positions 11, 13, 14, 16, 17, 20 or 22 of the α-subunit.

36. (Original) The method of Claim 33, 34 or 35 wherein the basic amino acids are lysine or arginine.

37. (Original) The method of Claim 28 wherein said agent is selected from the group consisting of cytoprotective compounds, antibodies, drugs, sensitizers, biological response modifiers, radionuclides, toxins, viruses or combinations thereof.

38. (Original) The method of Claim 37 wherein the agent is a drug selected from the group consisting of natural or synthetic estrogens, estrogen receptor modulators, progestins, androgens, ovulation stimulants, gonadotropin-releasing hormones, androgen inhibitors, bisphosphonates, glucocorticoids, thyroid hormones, antithyroid agents, alkylating agents, antimetabolites, antimitotic agents, epipodophyllotoxins, antineoplastic antibiotics, antineoplastic hormones, platinum coordination complex agents, anthracenediones, substituted ureas, methylhydrazine derivatives, DNA topoisomerase inhibitors, retinoids, or combinations thereof.

39. (Original) The method of Claim 38 wherein the drug is selected from the group consisting of clomiphene, finasteride, propylthiouracil, methimazole, bleomycin, vincristine, vinblastine, cisplatin, mitomycin, ifosfamide, cyclophosphamide, doxorubicin, paclitaxel, fiuorouracil, carboplatin, epirubicin, altretamine, vinorelbine, mitoxantrone, bromocriptine prednisone, porfimer, mitotane or combinations thereof.

40. (Original) The method of Claim 38 wherein the sensitizer is selected from the group consisting of metronidazole, misonidazole, verapamil, diltiazem or combinations thereof.

41. (Original) The method of Claim 37 wherein the agent is a biological response modifier selected from the group consisting of interferon-α, interferon-β, interferon-γ, tumor necrosis factor, lymphotoxin, interleukin-1, interleukin-2, interleukin-3, interleukin-4, interleukin-5, interleukin-6, p53 or combinations thereof.

42. (Original) The method of Claim 37 wherein the agent is a monoclonal antibody, polyclonal antibody or combination thereof.

43. (Original) The method of Claim 37 wherein the agent is a cell signal transduction pathway modifier.

44. (Original) The method of Claim 43 wherein the agent is selected from the group consisting of forskolin, staurosporine, phorbol esters, non-steroidal antiinflammatory drugs, steroids, or combinations thereof.

45. (Original) The method of Claim 37 wherein the agent is a cytoprotective compound.

46. (Original) The method of Claim 43 wherein the cytoprotective compound is mesna or leucovorin.

47. (Original) The method of Claim 37 wherein the radionuclide is selected from the group consisting of ^{131}I, ^{132}I, ^{32}P, ^{186}Re, ^{188}Re, ^{203}Pb, ^{212}Pb, ^{212}Bi, ^{109}Pd, ^{64}Cu, ^{67}Cu, ^{211}At, ^{97}Ru, ^{105}Rh, ^{198}Au and ^{199}Au.

48. (Original) The method of Claim 37 wherein the toxin is ricin, abrin, diphtheria toxin, Pseudomonas exotoxin A, ribosomal inactivating proteins, and mycotoxins.

49. (Original) The method of Claim 37 wherein the viruses are selected from the group consisting of adenovirus, retrovirus or combinations or fragments thereof.

50. (Original) The method of Claim 28 wherein the subject has or is suspected of having a disorder selected from the group consisting of thyroid cancer, Graves' disease, Hashimoto 's disorder, ovarian cancer, uterine cancer, cervical cancer, endometrial cancer, lung cancer, teratomas, breast cancer, testicular cancer or pituitary tumor.

51-75. (Cancelled)

76. (New) The method of claim 30 wherein the modified FSH differs from the wild type FSH in that the modified FSH α-subunit comprises at least one basic amino acid at positions selected from the group consisting of 11, 13, 14, 16, 17, 20 and 22.

77. (New) The method of Claim 30 wherein the modified FSH comprises at least one basic amino acid at position 1, 6, 17, 58, 63, 66, 69 and 81 of the β-subunit.

78. (New) The method of Claim 30 wherein the modified FSH comprises at least three basic amino acids at positions 11, 13, 14, 16, 17, 20 or 22 of the α-subunit.

79. (New) The method of Claim 76, 77, or 78 wherein the basic amino acids are lysine or arginine.

80. The method of claim 78 wherein the modified FSH comprises the amino acid substitutions of Q13R, E14R, P16R, and Q20R.